

## 2.0 Burrell, Pennsylvania, Disposal Site

### 2.1 Compliance Summary

The Burrell, Pennsylvania, Disposal Site, inspected on September 19, 2007, was in excellent condition. The disposal cell, its cover, and associated drainage features are performing as designed. The security perimeter fence was replaced in 2007. Control of undesirable vegetation and noxious weeds continued at the site. Groundwater monitoring is required every 5 years and was not performed in 2007. The 2004 monitoring indicated there is no contamination being released and that the disposal cell is performing as designed. No cause for a follow-up or contingency inspection was identified.

### 2.2 Compliance Requirements

Requirements for the long-term surveillance and maintenance of the Burrell, Pennsylvania, Uranium Mill Tailings Radiation Control Act (UMTRCA) Title I disposal site are specified in the *Long-Term Surveillance Plan [LTSP] for the U.S. Department of Energy Burrell Vicinity Property, Blairsville, Pennsylvania* (GJO-2002-331-TAR, U.S. Department of Energy [DOE] Grand Junction, Colorado, April 2000) and in procedures established by DOE to comply with requirements of Title 10 *Code of Federal Regulations* Part 40.27 (10 CFR 40.27). These requirements are listed in Table 2-1.

Table 2-1. License Requirements for the Burrell, Pennsylvania, Disposal Site

Requirement	Long-Term Surveillance Plan	This Report
Annual Inspection and Report	Section 3.3	Section 2.3.1
Follow-up or Contingency Inspections	Section 3.5	Section 2.3.2
Routine Maintenance and Repairs	Section 3.6	Section 2.3.3
Groundwater Monitoring	Section 3.7	Section 2.3.4
Corrective Action	Section 3.6.3	Section 2.3.5

**Institutional Controls**—Institutional controls at the disposal site, as defined by DOE Policy 454.1, consist of federal ownership of the property, a site perimeter fence, warning/no trespassing signs placed along the property boundary, and locked gates.

The 72-acre disposal site is owned by the United States of America and was accepted under the U.S. Nuclear Regulatory Commission general license (10 CFR 40.27) in 1994. DOE is the licensee and, in accordance with the requirements for UMTRCA Title I sites, is responsible for the custody and long-term care of the site.

Inspectors found no evidence that these institutional controls were ineffective or violated.

### 2.3 Compliance Review

#### 2.3.1 Annual Inspection and Report

The site, located southeast of Blairsville, Pennsylvania, was inspected on September 19, 2007. Results of the inspection are described below. Features and photograph locations (PLs)

Mentioned in this report are shown on Figure 2-1. Numbers in the left margin of this report refer to items summarized in the Executive Summary table.

### 2.3.1.1 Specific Site Surveillance Features

**Site Access, Fence, Gates, and Signs**—Access to the site is off Strangford Road on a site access road within a perpetual right-of-way through private property (Tract 201-E) and across DOE leased land crossing the Norfolk Southern Railroad tracks to the entrance gate in the east end of the chain-link site security fence. Personnel associated with commercial interests use the road for access to the railroad tracks and several nearby natural gas wells. The entrance gate and the four personnel gates were in good condition at the time of the inspection.

- 2A A new security fence was installed in the summer of 2007 (PL-1). The chain link fence includes a top rail, but no angle brackets or barbed wire were installed. Of the 17 perimeter signs mounted on the security fence, 13 were in good condition, three are missing and need to be replaced (P1, P2, and P16), and one has 3 bullet holes in it (P15) but it is still serviceable. The site entrance sign was missing. A temporary sign was installed during the inspection. A permanent sign will be installed in 2008.

All gates to the site are new and in excellent condition. Three new personnel gates have been added to the site in addition to the existing personnel and entrance gates. Locations of the new gates are shown on Figure 2-1. Vegetation (i.e., primarily Japanese knapweed) is rapidly encroaching upon areas of the new fence; a vegetation free maintenance corridor is maintained along the fence line (PL-2).

**Site Markers and Monuments**—There is only one site marker (SMK-1) and it is located at the east end of the site near the entrance gate. The site marker was in excellent condition. Vegetation around the site marker is cleared annually.

The site has seven boundary monuments and three survey monuments. Four boundary monuments were in good condition, BM-4 is missing entirely, and the cap to BM-5 is broken (PL-3). Both boundary monuments were most likely damaged as a result of the fence replacement and will be replaced in 2008. Boundary monument BM-1 is covered with soil in an area overgrown by vegetation and was not inspected.

Four pairs of erosion control markers are located in dense stands of vegetation, where they often are difficult to find. In 2007, all erosion control markers were located, inspected, and found to be in good condition. There was no sign of erosion at the site.

**Monitor Wells**—The site has four pairs of monitor wells, with a shallow (alluvial) completion and deeper (bedrock) completion well in each pair. All wells were located during the inspection and found to be secured with a lock, labeled with identification numbers, and although rusted, the protective casing of each well was in good condition. The wells were redeveloped in 2007.

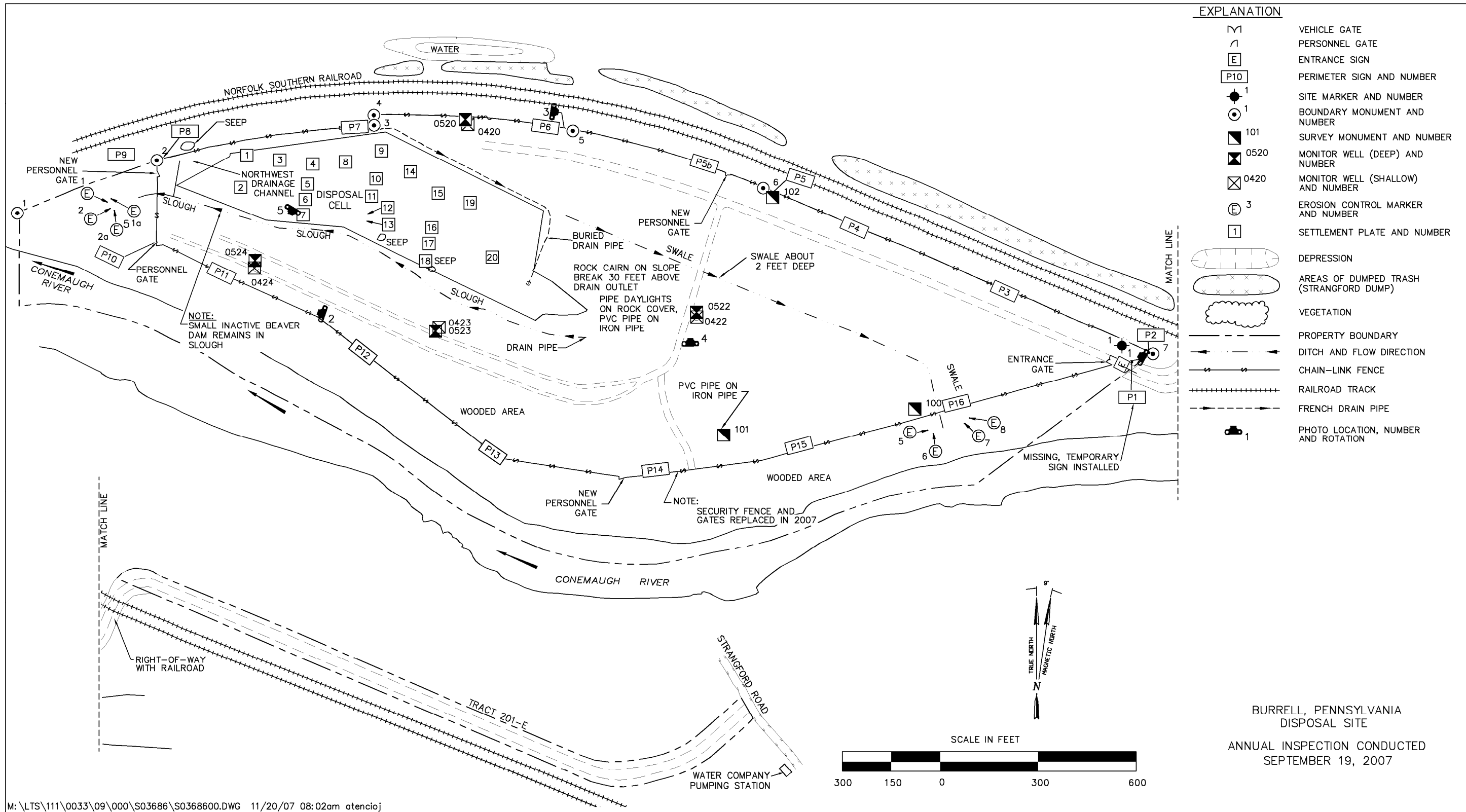


Figure 2-1. 2007 Annual Compliance Drawing for the Burrell, Pennsylvania, Disposal Site

### 2.3.1.2 Transects

To ensure a thorough and efficient inspection, the site was divided into four areas referred to as transects: (1) the disposal cell; (2) the area between the disposal cell and site boundary; (3) the site perimeter; and (4) the outlying area.

The area inside each transect was inspected by walking a series of traverses. Within each transect, the inspectors examined specific site surveillance features, drainage structures, vegetation, and other features. Inspectors also looked for evidence of settlement, erosion, or other modifying processes that might affect site integrity or the long-term performance of the site.

**Disposal Cell**—The riprap-covered disposal cell is in excellent condition. There were no indications of cell instability, such as slumping, bulging, or differential settlement. Rock quality is excellent—degradation of the limestone riprap was not evident.

2B Trees and shrubs continue to establish in the riprap on the disposal cell. Studies at the Burrell site concluded that plant growth on the cell poses no added public or environmental risk of exposure to contaminants within the disposal cell. It was concluded that vegetation growth at this site might actually enhance cover performance through evapotranspiration processes. These studies further concluded that plant growth would not be detrimental to the proper functioning of the radon barrier. NRC concurred with the revised LTSP (April 2000), which no longer requires active control of vegetation on the cell cover. NRC has suggested that DOE reevaluate the effects of vegetation on cover performance in 10 or 20 years to confirm performance parameters and predictions.

**Area Between the Disposal Cell and Site Boundary**—The area surrounding the disposal cell and inside the security fence was cleared during reclamation and is covered by thick grass and re-establishing hardwood trees (PL-4). Periodic mowing has maintained access to monitoring wells; the center and northern portions of the site remain as grassland.

In 1998 a perforated pipe and rock-filled trench drain were installed along the base of the north side slope of the disposal cell to prevent ponding and to intercept water that was suspected to be flowing under the cell and emerging as seeps along the south side of the cell. In 2007 the area along the drain was dry and no seeps were observed on the south side of the cell.

Poison hemlock is present on the southern edge of the grass-covered area, east of the disposal cell. Poison hemlock poses a safety hazard to personnel who must walk through or work within infested areas and will be controlled on site.

2C A beaver dam is present on the slough at the top of the toe of the riprap slope south of the disposal cell and several feet of water has collected behind the dam. This dam appears to be inactive and water levels behind the dam are not high enough to saturate the tailings or impact the integrity of the disposal cell (PL-5). Therefore, DOE has elected not to mobilize equipment to remove the dam. Instead DOE will continue to monitor the dam and possible impacts to the disposal site.

**Site Perimeter**—An active seep along the north security fence about 60 feet east of perimeter sign P8 and west of the disposal cell is supporting wetland-type vegetation (e.g. cattails and willows) indicating that the area remains saturated. This area will continue to be monitored for seeps to determine if they pose a threat to the integrity of the disposal cell. Conceivably, the seeps also could destabilize the nearby railroad embankment. The water flowing from a seep along the fence line is coming from upland areas just north of the railroad tracks.

Japanese knapweed is established along the south and west sides of the site perimeter and encroaching upon the new security fence (PL-2). Erosion control markers can be particularly hard to find in the dense vegetation. Also, spotted knapweed patches remain along access paths to groundwater monitor wells within wooded areas. DOE uses mowing and herbicide applications to control this listed weed.

**Outlying Area**—The area beyond the site boundary for a distance of 0.25 mile was visually inspected for signs of erosion, development, and other changes that might affect the site. A dirt railroad access road along the north side of the tracks provides access to a long, narrow wooded area along the tracks that has been used for illegal dumping. Dumping activity appears to have decreased since 2004. Although township authorities are aware of the problem, none of the trash has been removed. This activity is not a direct threat to the disposal site but the amount of dumping is an indication of the overall level of activity near the disposal site and may be a predictor of vandalism. Other areas around the site remained unchanged.

### **2.3.2 Follow-Up or Contingency Inspections**

DOE will conduct follow-up inspections if (1) a condition is identified during the annual inspection or other site visit that requires a return to the site to evaluate the condition, or (2) DOE is notified by a citizen or outside agency that conditions at the site are substantially changed.

No follow-up or contingency inspections were required in 2007.

### **2.3.3 Routine Maintenance and Repairs**

In 2007, DOE installed a new security fence. Three new personnel gates have been added to the site security fence.

### **2.3.4 Groundwater Monitoring**

In accordance with the LTSP, DOE monitors groundwater at this site as a best management practice to evaluate the performance of the disposal cell. The groundwater-monitoring network consists of eight wells (in four pairs) that are monitored for four target analytes: lead, molybdenum, selenium, and uranium. The revised LTSP (April 2000) stipulates monitoring is to be performed every 5 years. DOE last conducted groundwater monitoring in November 2004 (presented in the 2005 report); the results indicated there is no contamination being released and that the disposal cell is performing as designed. The next monitoring is scheduled for October 2009.

### 2.3.5 Corrective Action

Corrective action is taken to correct out-of-compliance or hazardous conditions that create a potential health and safety problem or that may affect the integrity of the disposal cell or compliance with 40 CFR 192.

No corrective action was required in 2007.

### 2.3.6 Photographs

*Table 2–2. Photographs Taken at the Burrell, Pennsylvania, Disposal Site*

<b>Photograph Location Number</b>	<b>Azimuth</b>	<b>Description</b>
PL–1	300	View down the outside of the site perimeter fence, from boundary monument BM–7.
PL–2	290	Vegetation encroaching on new fence.
PL–3	100	Boundary monument BM–5, damaged.
PL–4	360	Vegetation at center of site.
PL–5	200	Water behind beaver dam at toe of riprap blanket below south side slope.





*BUR 9/2007. PL-1. View down the outside of the site perimeter fence, from boundary monument BM-7.*



*BUR 9/2007. PL-2. Vegetation encroaching on new fence.*





*BUR 9/2007. PL-3. Boundary monument BM-5, damaged.*



*BUR 9/2007. PL-4. Vegetation at center of site.*





*BUR 9/2007. PL-5. Water behind beaver dam at toe of riprap blanket below south side slope.*